

I claim:

1. A plant for producing low-deuterium water from seawater comprising:
  - A) a solar still comprising:
    - 1) a black pan for absorbing radiation from the sun and transferring resulting solar heat to seawater to evaporate the seawater to produce water vapor,
    - 2) a condensate tank,
    - 3) a porous membrane, defining an upper side and a lower side, and positioned above said black pan for condensing said water vapor into a condensate,
      - a) comprising diffusing pours permitting said condensate to diffuse from said lower side to said upper side, and
      - b) being positioned in a slope to permit said condensate on said upper side to drain into said condensate tank, and
  - B) a water treatment unit for reducing deuterium concentration in said condensate comprising:
    - 1) a water filter to produce filtered condensate,
    - 2) an electrolyzer for separating a portion of said filtered condensate into hydrogen and oxygen,
    - 3) a reactor for combining at least a portion of said hydrogen and oxygen to produce heat and water having deuterium concentrations at least 50 percent lower than deuterium concentration in natural seawater, and
    - 4) a heat transfer system to transfer heat energy produced in said reactor to said reactor to provide heat to supplement said solar heat.
2. The plant as in Claim 1 wherein said black pan positioned on the sea and said black pan is a porous black pan having pours to permit seawater to diffuse to a top surface of said black pan.
3. The plant as in Claim 2 wherein said black pan is comprised of a polymer microporous hydrophilic material.
4. The plant as in Claim 3 wherein said hydrophilic material has an average pore size in the range of 7 to 150 microns and void volumes of 35 to 50 percent.
5. The plant as in Claim 1 wherein said reactor is a fuel cell.

6. The plant as in Claim 1 wherein said solar still also comprises a roof comprised of material substantially transparent to solar radiation.
7. The plant as in Claim 1 wherein said solar still is floating on salt water.
8. The plant as in Claim 1 wherein said solar still is located on land.
9. A process for producing low deuterium drinking water comprising the steps of:
10. A plant for producing low-deuterium water from seawater comprising:
  - A) evaporating salt water in a solar still comprising:
    - 4) a black pan for absorbing radiation from the sun and transferring resulting solar heat to seawater to evaporate the seawater to produce water vapor,
    - 5) a condensate tank,
    - 6) a porous membrane, defining an upper side and a lower side, and positioned above said black pan for condensing said water vapor into a condensate,
      - c) comprising diffusing pours permitting said condensate to diffuse from said lower side to said upper side, and
      - d) being positioned in a slope to permit said condensate on said upper side to drain into said condensate tank, and
  - B) treating the condensate produced in said solar still a water treatment unit to reduce deuterium concentration in said condensate in a treatment unit comprising:
    - 5) a water filter to produce filtered condensate,
    - 6) an electrolyzer for separating a portion of said filtered condensate into hydrogen and oxygen,
    - 7) a reactor for combining at least a portion of said hydrogen and oxygen to produce heat and water having deuterium concentrations at least 50 percent lower than deuterium concentration in natural seawater, and
    - 8) a heat transfer system to transfer heat energy produced in said reactor to said reactor to provide heat to supplement said solar heat.
11. The process as in Claim 10 and further comprising a step of selling said low deuterium water as drinking water.